Oct 30, 2025

UNTP Technical WG

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Attachments UNTP Technical WG

Meeting records Transcript

Summary

Harley Thomas, Alex Tweeddale, and Markus Sabadello discussed the identity resolver page restructure and the integration of DID methods, focusing on the goal of mapping URNs to resolvable URLs to retrieve digital product passport (DPP) link sets. Markus Sabadello confirmed the validity of the current `did:web` syntax for product identification, but Alex Tweeddale and Markus Sabadello debated the viability of extending this syntax to non-web-based DID methods, particularly concerning the consistent encoding of product identifiers like UUIDs and the potential for semantics in the method-specific identifier. Participants also explored using DID linked resources as a potentially more resilient and cryptographically sound alternative to the service section for pointing to DPPs and link sets.

Details

- **Identity Resolver Page Restructure and DID Methods** Harley Thomas introduced the agenda, focusing on the recently merged identity resolver page restructure and open PRs for adding DID methods guidance. Alex Tweeddale expressed interest in understanding and challenging assumptions regarding the identity resolver spec. The goal of the identity resolver is to map a URN (like a 2D barcode or RFID) to a resolvable URL to retrieve link sets about the digital product passport (DPP) (00:00:52).

- **Mapping URNs to Resolvable URLs** Harley Thomas explained the workflow using the example of Australian livestock, where an RFID tag with a National Livestock Inventory System (NLS) ID is known to be issued by Integrity Systems (00:02:19). They explained that the context allows an application to know the identity resolver operated by Integrity Systems in advance to construct a URL and retrieve the link set for the NLS ID. They further noted that the same principle applies to retail packages with GS1 barcodes, where the identity resolver operated by GS1 is queried to construct the URL and get the link set (00:03:39).
- **Validity of the DID Syntax** Alex Tweeddale questioned the validity of the DID syntax used in the spec, specifically the structure `did:web:domain:products:product-id`, which uses a colon delimiter for products and the product ID (00:06:10). Markus Sabadello confirmed that this syntax is fully valid, explaining that DID Web allows for multiple colons in the method-specific identifier, which translate to slashes on the web server. Markus Sabadello clarified that this structure is different from linked resources, where one DID can have multiple linked resources (00:07:47).
- **DID as Issuer vs. Subject and Use of the Service Section** Markus Sabadello clarified that the DID in question would be the DID of the product (the subject) and not the issuer (00:09:28). Harley Thomas noted that the intent was for the DID document to return a service array, which acts as the link set, providing a URL to get the DPP, and acknowledged that the issuing keys might be different from the DID used for discovery (00:10:37). Alex Tweeddale agreed that using the service section to point to a unique service endpoint to pull the DPP or link set makes sense (00:11:42).
- **Extending to Non-Web DID Methods** Alex Tweeddale suggested that while the current syntax works well for DID Web, supporting non-web-based DID methods might require defining a consistent approach for encoding product identifiers into an identifier like a UUID to be applied across multiple DID methods (00:11:42). They explained that this would allow the storage of DID documents and reference to link sets on more robust infrastructure like a blockchain or IPFS (00:13:22). Harley Thomas noted an open PR to add guidance to DID methods and that the identity resolver spec could be updated to show how self-issued identifiers can be constructed with other DID methods (00:16:30).
- **Semantics in the DID Identifier** Markus Sabadello stated that there should not be any semantics in the method-specific identifier itself, suggesting that if product identification is needed, it should be modeled as separate properties (00:18:34).

Alex Tweeddale then expressed concern that if a UUID were used instead of a product path in the DID string, there would need to be a way to derive the UUID from the product ID to confirm it belongs to the same product in the 2D barcode (00:19:52). Alex Tweeddale proposed that to query a DID resolver from a 2D matrix code, an algorithm would be needed to convert the product ID and other inputs into a consistent DID string like a UUID, particularly if non-web-based DID methods are used (00:23:30).

- **Challenges with Custom Mapping for DID Methods** Markus Sabadello expressed discomfort with the idea of a custom mapping between a barcode's information and the method-specific identifier, noting that this is not possible for many DID methods. They explained that while DID Web allows for choosing and organizing the namespace, that is a special case (00:26:14). Markus Sabadello also raised a concern about potential attack vectors, where an unauthorized party could generate a DID for a product ID if a decentralized method is used (00:28:51). Alex Tweeddale agreed to create a GitLab issue to formally capture the question of whether the current DID Web syntax is viable for extension to non-web-based DID methods (00:30:22).
- **Alternative to Service Endpoints: Linked Resources** Alex Tweeddale suggested exploring the use of DID linked resources as an alternative to the service section for pointing to DPPs and link sets (00:32:02). They noted that relying on service endpoints with URLs could lead to broken links or require updating the DID when the DPP link changes (00:33:43). Alex Tweeddale explained that linked resources allow resources like verifiable credentials to be associated with the DID, effectively making the DID a directory, which could offer a more cryptographically sound and future-proof way to store and retrieve DPPs and link sets (00:35:28) (00:39:49).
- **Linked Resources and Cryptographic Verifiability** Markus Sabadello acknowledged that the UNP specifications already provide cryptographic verifiability through signed VCs and hashes, but agreed that linked resources could offer additional features (00:41:43). They noted that linked resources could provide a history of changes and avoid broken links common with HTTP-based links. Harley Thomas recognized the need to study linked resources further, especially in relation to future challenges like decentralized access control in supply chains (00:43:13).
- **Decentralized Access Control** Alex Tweeddale suggested that decentralized DID methods, such as DID Checked, could be an interesting use case for

decentralized access control where multiple parties need to update a product's life cycle (00:44:24). They explained that this approach could allow for a multi-signature or multi-key approach, eliminating the need for a single company or hosting provider to consent to changes. Harley Thomas thanked Alex Tweeddale and Markus Sabadello for their feedback and contributions, requesting them to formally capture the raised issues in GitLab (00:45:48).

Suggested next steps

- [ ] Alex Tweeddale will create an issue on GitLab to explore if the current proposed syntax using did web is viable to be extended to non-web-based did methods.
- [ ] Alex Tweeddale will share relevant information and issues on Slack with Harley Thomas to be formally captured in GitLab.
- [ ] Harley Thomas will create an issue to clarify that the 'products' path in the DID web example should not imply any semantics in the identifier itself, and that it could be replaced with something else like a UUID.
- [ ] Harley Thomas will help address and close out issues raised in GitLab related to Alex Tweeddale's questions and concerns.